a common per subscriber price of $1 to both operators. The two operators must bid for exclusive rights to network B. There are two subscribers in each franchise area. Each values network A at $2. Network B is similarly valued by each of the cable subscribers.

To see how competition between the two operators in Area 1 would proceed and the outcome it would generate, it is helpful to first examine the competitive outcome that would obtain if each operator sold only network A. Clearly in Area 2 the MSO, facing no competition, would charge the monopoly price of $2. In Area 1, each would try to undercut the other's price until, at a price of $1, any further cuts would produce negative profits. Each operator would receive $1 for each customer served in Area 1 and break even, while subscribers would each realize a net benefit of $1 on the service.[10]

Now allow the two operators to bid for exclusive rights to network B. Because subscribers value network B at $2, being able to offer network B along with network A would allow the operator with the exclusive rights to charge its customers $2 more than they would be willing to pay for network A alone. In addition, the firm with the exclusive rights to network B is also likely to find it profitable to set prices for the combination of A and B, and A alone such that the operator that has only network A will not be able to retain any subscribers. To see how this would work, we consider the nature of price competition between an operator with A only and one with A and B.

For either of the operators, retaining a subscriber in the competitive market requires offering that subscriber a price for the network, or networks, supplied such that the subscriber realizes at least as much consumption value net of the price paid as the subscriber could realize by taking the competitor's offering instead. Now suppose the incumbent has won the rights to network B and the entrant sets a price of $2 for network A. By pricing the combination of A and B at $3.99, the incumbent would be offering each

[10] Note that we are not considering facilities costs, a complication we have left out to simplify the example.

subscriber 1¢ of consumption value net of the price paid, versus zero net consumption value with the entrant's service. To win the business of either of these customers, the entrant would have to respond with a price of $1.98 for network A. The incumbent would then respond with a price of $3.97 for the combination of A and B, and so on. At a price of $1, the entrant can reduce price no further, for to do so would produce an operating loss. But the incumbent can still win both customers with a price for the two together of $2.99, which leaves each subscriber with $1.01 in consumption value net of price. Note that the incumbent could also offer network A by itself for $1, so as to avoid any charges of predatory pricing. But with the bundle priced at $2.99, no one will subscribe to network A by itself—and the entrant would be out of business.[11]

After the price competition, the additional revenue net of the cost of procuring network A for the incumbent in Area 1 is $3.98 (the extra $1.99 times 2 customers). Since, by assumption, the entrant would realize the same addition to its revenues, both the entrant and the incumbent should be willing to bid $3.98 for the exclusive rights to network B in Area 1. Who would win is a toss up. However, because the incumbent will be able to further increase its revenue by also offering network B in Area 2, which it serves by itself, the incumbent will always be willing to bid some amount greater than $3.98 for the exclusive rights to network B, which would cover both areas. Of course, entrants who understand the inevitability of this competitive outcome would never incur the sunk costs of entry in the first place. One possible solution to this dilemma might be to require bidding for exclusive rights to take place on a franchise area-by-franchise area basis. But this would work only if entrants started with no subscriber count disadvantages relative to incumbents (i.e., no subscriber inertia), which almost certainly would not be the case.

[11] Aron and Wildman (1998) actually prove a much stronger result. They show that the firm with exclusive rights to one of the networks may even find it profitable to drive a rival with a superior type A network (a network with the same type of programming as Network A) from the market, as long as subscribers differ in how much they value type A and type B networks.

The upshot of this analysis is that allowing incumbents and entrants to compete for exclusive programming rights may make it possible for an incumbent cable operator to perpetuate its dominant position indefinitely by buying exclusive rights to popular programming. While not dispositive, the sports carriage findings of our competitive markets study are consistent with this thesis, and the following examples provide strong anecdotal evidence that it is incumbent operators who are most aggressively seeking exclusive programming rights, just as the theory predicts.

In 1996 Comcast, the dominant MSO in Philadelphia, purchased a majority interest in an entity that owned the Philadelphia 76ers and the Philadelphia Flyers sports franchises in the National Basketball Association and the National Hockey League, respectively. These interests were then combined in a joint venture with the Philadelphia Phillies to create Comcast SportsNet, a regional sports network. Comcast has since denied DirecTV, a DBS competitor, the right to deliver Comcast SportsNet to its satellite subscribers, even though DirecTV had carried Phillies, 76ers and Flyers events before through its carriage of Sports Channel Philadelphia, a sports channel that had to shut down after Comcast SportsNet took over these rights.[12]

TCI is the largest MSO in the Chicago area and has exclusive rights to CLTV, a local news channel owned by the Tribune Company and distributed by microwave. As a result, Ameritech has been unable to offer its Chicago cable subscribers this source of local news. When the Tribune Company decided to switch 62 Cubs games from its local television station, WGN, to CLTV in 1998, Ameritech was threatened with the loss of the opportunity to carry these popular games until an agreement was worked out with the Tribune Company that allowed Ameritech to retransmit the games—but only on an otherwise unused channel.

[12] Comcast justifies this arrangement as consistent with the law because Comcast SportsNet is distributed by terrestrial facilities.

Exclusivity arrangements are affecting more than just local sports and news programming. For example, MSNBC, CBS Eye on the People, TV Land, and FX are not available to the overbuilders and MMDS competitors to incumbent cable operators.

The petition to the FCC by Outdoor Life Network and Speedvision Network that they be allowed to enter into exclusive distribution arrangements with cable operators is further evidence of the growing importance attached to exclusivity by incumbent operators. Under the 1992 Cable Act, their partial ownership by three MSOs (Cox, Comcast and MediaOne) makes such arrangements illegal, but the two networks unsuccessfully argued that they can not compete for sales to cable systems with independent networks who can offer exclusivity.[13] Exclusivity would not be an issue, and incumbent MSOs could not make such demands, if these networks could reach equal size audiences through competitive services.

Finally, it should be noted that the loss of access to programming due to incumbents' demands for exclusive licenses is not a problem that entrants face only with new networks, or only with networks they have never carried. Even networks that have demonstrated their appeal to viewers through their performance on competitors' systems can be locked up and taken away by incumbents through exclusive licensing agreements. For example, Ameritech currently provides Classic Sports Network (CSN) to its subscribers, as it has almost from this network's inception in 1995. Over time CSN has grown in popularity and Ameritech has promoted it and featured it in its own marketing efforts. Now, with subscribers' interest in CSN well-documented, Ameritech is threatened with the loss of this network because CSN has signed exclusive distribution agreements with Media One that are to take effect on January 1, 1999, the date that CSN's carriage agreement with Ameritech New Media expires.

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[13] Petition of Exclusivity, In the Matter of Outdoor Life Network and Speedvision Network, FCC File No. CSR-5044-P, July 15, 1997.

If it continues, this trend of incumbent operators tying up increasing numbers of networks with exclusive licensing agreements cannot help but put entrants at an increasing competitive disadvantage and jeopardize the future of competition in multichannel video services.

IV. Current Programming Access Regulations Are Inadequate.

The 1992 Cable Act is the current law governing MVPD access to programming. This is supplemented to a modest degree by terms and conditions on programming access in the Time Warner-Turner and PrimeStar Partners consent decrees. The Cable Act provisions regarding access reflect a primary policy concern at the time that vertically integrated MSOs might try to weaken MVPD competitors by either denying them access to popular programming services in which they had ownership interests or by selling access to such services at discriminatorily high prices. The latter strategy would weaken and perhaps dissuade prospective competitors by raising their costs relative to the incumbents'. Thus the Cable Act mandated that vertically integrated networks be made available to other MVPDs and that they be supplied at nondiscriminatory rates, which essentially meant that any differences in rates that could not be justified on the basis of differing costs of service were prohibited.[14] Perhaps reflecting the fact that there were no important terrestrial alternatives to satellite delivery at the time, this prohibition was applied only to satellite delivered networks.

Subsequent experience and research has revealed the following inadequacies and omissions in the Cable Act's programming access protections. (1) Clear and economically sensible standards for identifying discriminatory prices were not articulated. (2) Problems associated with the supply of networks in which large MSOs do not have an attributable

[14] Discriminatory rates are permitted only to the extent that they are based on "economies of scale, cost savings, or other direct and legitimate economic benefits reasonably attributable to the number of subscribers served by the distributor." 1992 Cable Competition and Consumer Protection Act, § 628(c)(2)(A)(iii), 47 U.S.C. § 548.

interest were not anticipated. (3) The rising importance of regional channels, particularly regional sports channels, and the economic feasibility of delivering them to cable headends with terrestrial distribution technologies, were not anticipated. Each of these shortcomings in Cable Act protections is hindering the development of competition in multichannel video services.

The absence of clear standards for identifying discriminatory prices has meant little regulatory oversight and minimal constraints on the pricing of vertically integrated cable networks. One standard that has been employed is the "similarly situated" MVPD standard articulated in the consent decree with the FTC upon which the merger of Time Warner and Turner Broadcasting System, Inc. was conditioned.[15] "Similarly situated" is generally defined in terms of numbers of subscribers. An analogous standard was employed in the stipulation in the final judgment in *State of NY v. PrimeStar* that networks affiliated with PrimeStar's MSO owners should not discriminate against DBS or MMDS services in favor of cable operators of similar size.[16] The logical flaw in this standard for nondiscrimination is that, if it is to make economic sense, it must embed the assumption that the prices at which vertically integrated networks are sold to noncompeting MVPDs (i.e., those that serve different geographic areas) are cost justified. However, as we showed with our analysis of network supply price data in Section II, the best explanation for the large differences in wholesale prices charged large MSOs and smaller MVPDs is the greater threat noncarriage by a large MSO poses to a network's profits and viability compared to the threat of noncarriage by an entity representing many fewer subscribers. Arguments that observed price differentials are based on cost of service differences are just not supported by fact. Furthermore, the "comparably situated standard" would permit a large MSO with significant ownership interests in networks to raise the supply prices of its vertically

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[15] United States. Federal Trade Commission. *In the Matter of Time Warner Inc., Turner Broadcasting System, Inc., Tele-Communications, Inc., and Liberty Media Corporation*, Docket No. C-3709, Decision and Order, February 3, 1997, ¶¶VI(A)-VI(B).

[16] *State of NY vs. Primestar Partners*, filed 6/9/93; final judgment 9/14/93.

integrated networks to small noncompeting MVPDs just to increase the prices it could charge new competitors in its own markets.

Given that the differences in network supply prices charged small and large MVPDs appear to primarily reflect differences in bargaining power, and not cost differences, the public interest in the development of vigorous multichannel video competition would be better served by a nondiscrimination standard requiring that competitors be sold programming on terms equivalent to those granted the incumbents they compete against in their own markets.[17] Exceptions should be granted only to the extent that significant differences in the cost of supplying programming to different size buyers can be demonstrated.

The focus on networks in which large MSOs had significant ownership interests in the framing of the 1992 Cable Act diverted attention from the possibility that the size of MSO network owners, which is the source of the policy problems raised by their vertical integration into programming, might also lead to problems in the ways they dealt with independently supplied networks. The analysis of Sections II and III above shows that this is the case. Their size-based bargaining advantage means that large MSOs can negotiate supply prices for independently supplied networks that are dramatically discounted from the prices at which these networks are sold to smaller MVPDs—even though, again, these price differences cannot be pegged to differences in the costs of delivering networks to MVPDs of different sizes. This might be termed "induced" price discrimination. This means that competing MVPDs start with a formidable competitive handicap due to higher input prices that both seriously limits their chances for commercial success and, because the input price differences are not cost-justified, insulates incumbents from the full rigors of competition. Requiring that all MVPDs be given access to programming on terms equal to

[17] The appropriate price standard would have to be the implicit transfer price when the incumbent has an ownership interest in the network in question. A candidate proxy for the implicit transfer price would be

those granted the incumbents they compete against would also solve the problem of induced price discrimination.

Dealing with exclusive supply arrangements is more complicated. The simplest approach would be to treat a refusal to supply a programming service to a competitor as equivalent to charging a prohibitively high price, and then apply the same market competitor nondiscrimination standard to mandate access. If this approach were applied to all programming services, regardless of the delivery technology employed, the possibility that incumbents might employ exclusive supply arrangements to anticompetitively disadvantage entrants would be totally eliminated.

The typical argument justifying exclusive program supply arrangements (whether through ownership or licensing) is that the MVPD seeking exclusive rights needs the security and potentially higher profits of guaranteed exclusivity as compensation for the risk it must take in allocating channel capacity to new services.[18] A MSO's need for exclusivity to justify its risks in committing to a new service is questionable if it already serves the vast majority of a market's customers. In this situation, there is the danger that exclusivity will be used to preempt the competition, rather than meet it. This observation is particularly pertinent to the contracts specifying exclusivity only with respect to their principal nonsatellite competitors (cable overbuilds and MMDS systems) that many MSOs are now demanding. Exclusivity is not a strategy that is equally available to entrants and incumbents. Small entrants will always find it difficult to negotiate exclusivity agreements of their own because programming services deny themselves access to too much of the market if they grant exclusivity to the newcomers. Furthermore, as demonstrated in Section III, the advantages of size in the video services industry mean that incumbents will always be able to outbid entrants for exclusive rights to attractive new services.

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the price at which the network is sold to another MSO of approximately the same size as the vertically integrated incumbent.

One thing that is clear from this analysis of current programming access regulations is that issues relating to horizontal concentration and what is considered to be an attributable ownership interest in a programming service cannot be addressed independently of the regulations governing access. Allowing MSOs to control access to an even larger fraction of MVPD subscribers would only exacerbate the problems attributable to the inadequacies of current programming access regulations that were just discussed. Relaxing the attribution threshold simply increases the number of programming services over which the major MSOs might be able to exert direct rather than indirect influence and expands the scope of that influence. Again, without stronger protections against discrimination in access to programming than currently exist, it is hard to justify the risks such a change in policy entails.[19]

V. Summary and Conclusions

Our studies of the wholesale prices MVPDs pay for networks and our econometric evaluation of cable system pricing and programming demonstrate that cable market entrants do not compete on a level playing field, especially when their entrenched rivals are affiliated with large MSOs. This is because entrants do not gain access to programming on the same terms as incumbent systems, particularly those operated by the largest MSOs. Our main findings in support of this conclusion are as follows:

- The large volume discounts for programming revealed in network rate cards, and especially in industry financial statistics, significantly reduce the margin of profit available to entrants compared with the largest MSOs.

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[18] It is also worth noting that entrants also must assess the opportunity costs of channels allocated to untried new services.

[19] The major MSOs are also acquiring significant ownership interests in technologies and associated services that will expand the range of cable service offerings in the future. The implications of these vertical ties for the future of cable competition should also be examined before relaxing the horizontal ownership restrictions and the cable attribution rules currently in place.

- These cost advantages cannot be due to negotiation efficiencies alone. In fact, for many networks, the cost of negotiation would have to total from hundreds of thousands to millions of dollars for each transaction—an implausibly high number—to explain the wholesale prices differences observed. Our own analysis suggests that negotiation costs are actually quite low.

- Our empirical and theoretical analyses indicate the cost disadvantage new competitors face is due primarily to the exercise of bargaining power on the part of the largest incumbent MSOs, and not to efficiencies these MSOs might realize due to their size.

- All these effects are apparent for the largest 10 MSOs, but are particularly significant for TCI and Time Warner systems.

- New entrants—despite having significantly more channel capacity than incumbents—are less likely to carry valuable programming such as regional sports channels. This outcome can be partially attributed to higher license fees, but could also stem from the existence of exclusivity arrangements these channels have with incumbent MSOs.

- Current policies do not adequately address the programming access problems of new entrants.

These results have important policy implications. First, policies governing access to programming should be changed and elaborated in two ways: The standard for determining program access should be revised to guarantee that MVPD entrants can procure programming on terms equivalent to those offered the incumbents cable MSOs they compete against in their own markets; and, because exclusivity arrangements can have a detrimental impact on competition, policies governing exclusivity should also be revised. Second, our evidence indicates that the size threshold beyond which a MSO has a noticeable impact on market performance is below the current levels of market control experienced by the largest MSOs, particularly TCI and Time Warner. Because the

programming access problems examined in this report stem from the current combination of inadequate access policy protections and significant horizontal concentration among MSOs, it would be unwise to consider relaxing horizontal ownership restrictions without first thoroughly revising programming access policies. As the ownership attribution rules are yet another form of protection against the problems posed by high concentration of MVPD subscribers among a few large MSOs, the same cautious approach towards revising these rules is also advised.

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Appendix A: Analysis of Programming Choices

In this Appendix, we present the detailed regression results from our analysis of cable system operator programming choices. As described in the text, we utilized data from over 8,000 systems to examine the factors correlated with the carriage of different program types and individual programs. Table A-1 illustrates one such regression for Time Warner networks, including TBS, TNT, CNN, and Headline News. For this sample representing 80% of the cable systems currently operating, the average system carries 2.75 of these networks. With growth in the size of the system, the estimates indicate that the number of networks increases significantly. For example, as one goes from 10,000 to 100,000 homes passed, the number of networks increases by 1.5. The average for TCI-owned systems is .5 higher. For systems with higher channel capacity (anything over 24), the number of Time Warner networks increases by about .7. The regional indicators suggest that systems in the mountain, midwest, southwest, and south are more likely to carry a Time Warner network than are systems located in the northeast or pacific regions.

Table A-2 presents an identical model for independent networks, such as ESPN, Nick, and USA, while Table A-3 provides estimates for networks owned by TCI-Liberty. Table A-4 examines monthly subscription fees and Table A-5 presents a model for the sum (in logarithmic form) of all basic networks, whether they are provided by a vertically-integrated MSO or an independent network supplier. Table 6 analyzes the ratio of MSO networks to independent networks and, among other things, demonstrates that all MSOs appear to favor the programming provided by the vertically integrated MSOs.

Tables A7-15 provide estimates for a subset of individual networks, including Discovery, USA, Lifetime, MTV, the Weather Channel, the Nashville Network, A&E, BET, and Cablevision's American Movie Classics. These models are linear probability

models (with the dependent variable expressed as equal to one if carried by the system, zero otherwise). Logistic versions of these models were also examined, but invariably led to similar results. The linear probability estimates are provided because they are more straightforward to interpret. For example, for Table A-7, the coefficient of .186 for TCI implies that the probability of a TCI system carrying its own Discovery Channel is 18.6% higher than for a MSO that is not one of the largest 10.

Table A-1
Dependent Variable: Time-Warner Networks

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	2339.00277	129.94460	133.510	0.0001
Error	8242	8021.91988	0.97330		
C Total	8260	10360.92265			

Root MSE	0.98656	R-square	0.2258
Dep Mean	2.74313	Adj R-sq	0.2241
C.V.	35.96470		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	0.801069	0.08495434	9.429	0.0001
log(Stations)	-0.016664	0.02780401	-0.599	0.5490
Interconnect	-0.010408	0.04171616	-0.249	0.8030
Local Adv	0.186134	0.03251498	5.725	0.0001
log(Homes)	0.150943	0.00960004	15.723	0.0001
Capacity 24-35	0.613826	0.03240323	18.943	0.0001
Capacity 36-51	0.753203	0.03645571	20.661	0.0001
Capacity 52-61	0.746182	0.04328185	17.240	0.0001
Capacity 62-79	0.689572	0.07087014	9.730	0.0001
Capacity 80 +	0.726516	0.12398478	5.860	0.0001
TCI	0.496836	0.03838605	12.943	0.0001
Time Warner	0.236099	0.05545753	4.257	0.0001
Large MSO	0.090589	0.02411570	3.756	0.0002
South	0.155982	0.04518772	3.452	0.0006
Pacific	-0.068412	0.05759494	-1.188	0.2349
Midwest	0.196193	0.04379156	4.480	0.0001
South West	0.165069	0.05036415	3.278	0.0011
Mountain	0.394942	0.05611390	7.038	0.0001
Other Region	0.422132	0.24363226	1.733	0.0832

Table A-2
Dependent Variable: Independent Networks

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	61164.42655	3398.02370	445.559	0.0001
Error	8242	62857.06698	7.62643		
C Total	8260	124021.49352			

Root MSE	2.76160	R-square	0.4932
Dep Mean	6.22346	Adj R-sq	0.4921
C.V.	44.37403		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	-3.654781	0.23780635	-15.369	0.0001
log(Stations)	0.005420	0.07782970	0.070	0.9445
Interconnect	-0.077257	0.11677295	-0.662	0.5082
Local Adv	0.510257	0.09101676	5.606	0.0001
log(Homes)	1.044995	0.02687268	38.887	0.0001
Capacity 24-35	1.834504	0.09070396	20.225	0.0001
Capacity 36-51	2.677385	0.10204777	26.237	0.0001
Capacity 52-61	3.136097	0.12115566	25.885	0.0001
Capacity 62-79	2.949491	0.19838150	14.868	0.0001
Capacity 80 +	3.487571	0.34706138	10.049	0.0001
TCI	0.475661	0.10745120	4.427	0.0001
Time Warner	0.466827	0.15523813	3.007	0.0026
Large MSO	-0.138304	0.06750528	-2.049	0.0405
South	0.516967	0.12649063	4.087	0.0001
Pacific	-0.413932	0.16122122	-2.567	0.0103
Midwest	0.448794	0.12258246	3.661	0.0003
South West	0.022242	0.14098062	0.158	0.8746
Mountain	0.234955	0.15707547	1.496	0.1347
Other Region	-0.792018	0.68198166	-1.161	0.2455

Table A-3
Dependent Variable: TCI Networks

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	6453.87697	358.54872	262.575	0.0001
Error	8242	11254.50991	1.36551		
C Total	8260	17708.38688			

Root MSE	1.16855	R-square	0.3645
Dep Mean	1.77678	Adj R-sq	0.3631
C.V.	65.76771		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	-0.613491	0.10062588	-6.097	0.0001
log(Stations)	-0.164511	0.03293302	-4.995	0.0001
Interconnect	-0.004351	0.04941155	-0.088	0.9298
Local Adv	0.200349	0.03851302	5.202	0.0001
log(Homes)	0.264319	0.01137096	23.245	0.0001
Capacity 24-35	0.532302	0.03838067	13.869	0.0001
Capacity 36-51	0.891528	0.04318071	20.646	0.0001
Capacity 52-61	1.041274	0.05126606	20.311	0.0001
Capacity 62-79	1.142797	0.08394357	13.614	0.0001
Capacity 80 +	1.730166	0.14685628	11.781	0.0001
TCI	0.802725	0.04546713	17.655	0.0001
Time Warner	0.212165	0.06568779	3.230	0.0012
Large MSO	0.035505	0.02856433	1.243	0.2139
South	0.227121	0.05352351	4.243	0.0001
Pacific	-0.029170	0.06821948	-0.428	0.6690
Midwest	-0.100543	0.05186980	-1.938	0.0526
South West	-0.000684	0.05965484	-0.011	0.9909
Mountain	-0.174105	0.06646524	-2.619	0.0088
Other Region	-0.238217	0.28857515	-0.825	0.4091

Table A-4
Dependent Variable: log(monthly subscription fee)

Analysis of Variance

Source		Sum of Squares	Mean Square	F Value	Prob>F
Model	18	243.42983	13.52388	102.508	0.0001
Error	8018	1057.81214	0.13193		
C Total	8036	1301.24197			

Root MSE	0.36322	R-square	0.1871
Dep Mean	2.80522	Adj R-sq	0.1853
C.V.	12.94804		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	3.096126	0.03167556	97.745	0.0001
log(Stations)	-0.033222	0.01036721	-3.205	0.0014
Interconnect	0.041216	0.01549569	2.660	0.0078
Local Adv	-0.015258	0.01203787	-1.268	0.2050
log(Homes)	-0.060193	0.00356775	-16.871	0.0001
Capacity 24-35	0.226771	0.01228817	18.454	0.0001
Capacity 36-51	0.268483	0.01371627	19.574	0.0001
Capacity 52-61	0.234943	0.01620939	14.494	0.0001
Capacity 62-79	0.280719	0.02639756	10.634	0.0001
Capacity 80 +	0.426601	0.04603032	9.268	0.0001
TCI	-0.300964	0.01419809	-21.198	0.0001
Time Warner	-0.172728	0.02060759	-8.382	0.0001
Large MSO	-0.059093	0.00899726	-6.568	0.0001
South	0.009526	0.01689425	0.564	0.5729
Pacific	0.171007	0.02153171	7.942	0.0001
Midwest	0.067957	0.01634848	4.157	0.0001
South West	0.118353	0.01881932	6.289	0.0001
Mountain	0.119129	0.02094458	5.688	0.0001
Other Region	0.067431	0.08973496	0.751	0.4524

Table A-5
Dependent Variable: log(total networks)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	1281.87553	71.21531	232.338	0.0001
Error	7773	2382.55017	0.30652		
C Total	7791	3664.42571			

Root MSE	0.55364	R-square	0.3498
Dep Mean	2.48596	Adj R-sq	0.3483
C.V.	22.27067		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	1.168360	0.04976902	23.476	0.0001
log(Stations)	-0.055419	0.01616538	-3.428	0.0006
Interconnect	-0.033274	0.02391134	-1.392	0.1641
Local Adv	0.109388	0.01868902	5.853	0.0001
log(Homes)	0.134977	0.00560435	24.084	0.0001
Capacity 24-35	0.395066	0.01902917	20.761	0.0001
Capacity 36-51	0.519548	0.02132602	24.362	0.0001
Capacity 52-61	0.558522	0.02539492	21.993	0.0001
Capacity 62-79	0.592348	0.04146284	14.286	0.0001
Capacity 80 +	0.750854	0.07182100	10.455	0.0001
TCI	0.212701	0.02195071	9.690	0.0001
Time Warner	0.076000	0.03234657	2.350	0.0188
Large MSO	-0.013744	0.01396095	-0.984	0.3249
South	0.017453	0.02654140	0.658	0.5108
Pacific	-0.014930	0.03372496	-0.443	0.6580
Midwest	0.020191	0.02565169	0.787	0.4312
South West	-0.060396	0.02932561	-2.060	0.0395
Mountain	0.049321	0.03252134	1.517	0.1294
Other Region	0.036014	0.14548366	0.248	0.8045

Table A-6
Dependent Variable: Ratio of MSO to Independent Nets

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	279.75873	15.54215	78.693	0.0001
Error	7807	1541.91125	0.19750		
C Total	7825	1821.66998			

Root MSE	0.44441	R-square	0.1536
Dep Mean	0.87511	Adj R-sq	0.1516
C.V.	50.78366		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	1.650864	0.03982368	41.454	0.0001
log(Stations)	-0.026786	0.01289502	-2.077	0.0378
Interconnect	0.027428	0.01903433	1.441	0.1496
Local Adv	0.028229	0.01491627	1.892	0.0585
log(Homes)	-0.087892	0.00447844	-19.626	0.0001
Capacity 24-35	-0.173382	0.01556227	-11.141	0.0001
Capacity 36-51	-0.190157	0.01728704	-11.000	0.0001
Capacity 52-61	-0.199452	0.02046296	-9.747	0.0001
Capacity 62-79	-0.155094	0.03296766	-4.704	0.0001
Capacity 80 +	-0.067784	0.05691773	-1.191	0.2337
TCI	0.154921	0.01755562	8.825	0.0001
Time Warner	0.067855	0.02526865	2.685	0.0073
Large MSO	0.103573	0.01115988	9.281	0.0001
South	-0.019728	0.02126698	-0.928	0.3536
Pacific	0.073942	0.02717073	2.721	0.0065
Midwest	-0.066030	0.02057601	-3.209	0.0013
South West	0.021557	0.02363594	0.912	0.3618
Mountain	0.036496	0.02621584	1.392	0.1639
Other Region	0.088540	0.11312566	0.783	0.4338

Table A-7
Dependent Variable: Discovery Channel (Liberty)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	164.85948	9.15886	48.123	0.0001
Error	8242	1568.62920	0.19032		
C Total	8260	1733.48868			

Root MSE	0.43626	R-square	0.0951
Dep Mean	0.70040	Adj R-sq	0.0931
C.V.	62.28709		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	0.394629	0.03756700	10.505	0.0001
log(Stations)	-0.029555	0.01229500	-2.404	0.0162
Interconnect	-0.014680	0.01844698	-0.796	0.4262
Local Adv	0.082374	0.01437820	5.729	0.0001
log(Homes)	0.017681	0.00424516	4.165	0.0001
Capacity 24-35	0.206207	0.01432878	14.391	0.0001
Capacity 36-51	0.249907	0.01612080	15.502	0.0001
Capacity 52-61	0.240776	0.01913933	12.580	0.0001
Capacity 62-79	0.230391	0.03133894	7.352	0.0001
Capacity 80 +	0.300001	0.05482636	5.472	0.0001
TCI	0.186530	0.01697440	10.989	0.0001
Time Warner	0.065801	0.02452345	2.683	0.0073
Large MSO	0.022215	0.01066402	2.083	0.0373
South	-0.024734	0.01998211	-1.238	0.2158
Pacific	-0.012806	0.02546861	-0.503	0.6151
Midwest	-0.003335	0.01936473	-0.172	0.8633
South West	0.001407	0.02227114	0.063	0.9496
Mountain	-0.034633	0.02481370	-1.396	0.1628
Other Region	-0.006298	0.10773474	-0.058	0.9534

Table A-8
Dependent Variable: USA Network (Independent)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	214.04392	11.89133	76.264	0.0001
Error	8242	1285.12373	0.15592		
C Total	8260	1499.16766			

Root MSE	0.39487	R-square	0.1428
Dep Mean	0.76177	Adj R-sq	0.1409
C.V.	51.83595		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	0.262785	0.03400313	7.728	0.0001
log(Stations)	-0.013373	0.01112861	-1.202	0.2295
Interconnect	-0.009305	0.01669697	-0.557	0.5774
Local Adv	0.036359	0.01301418	2.794	0.0052
log(Homes)	0.038567	0.00384243	10.037	0.0001
Capacity 24-35	0.271835	0.01296945	20.960	0.0001
Capacity 36-51	0.303286	0.01459147	20.785	0.0001
Capacity 52-61	0.264865	0.01732364	15.289	0.0001
Capacity 62-79	0.236129	0.02836590	8.324	0.0001
Capacity 80 +	0.246268	0.04962514	4.963	0.0001
TCI	0.067932	0.01536408	4.421	0.0001
Time Warner	0.026134	0.02219698	1.177	0.2391
Large MSO	-0.046322	0.00965235	-4.799	0.0001
South	0.021659	0.01808647	1.198	0.2311
Pacific	-0.080447	0.02305248	-3.490	0.0005
Midwest	0.049876	0.01752765	2.846	0.0044
South West	-0.038033	0.02015834	-1.887	0.0592
Mountain	0.057314	0.02245969	2.552	0.0107
Other Region	0.007837	0.09751426	0.080	0.9359

Table A-9
Dependent Variable: Lifetime (Independent)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	779.78409	43.32134	283.248	0.0001
Error	8242	1260.57034	0.15294		
C Total	8260	2040.35444			

Root MSE	0.39108	R-square	0.3822
Dep Mean	0.44510	Adj R-sq	0.3808
C.V.	87.86304		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	-0.661138	0.03367673	-19.632	0.0001
log(Stations)	0.008920	0.01102178	0.809	0.4184
Interconnect	0.006323	0.01653670	0.382	0.7022
Local Adv	0.028630	0.01288926	2.221	0.0264
log(Homes)	0.126634	0.00380555	33.276	0.0001
Capacity 24-35	0.161329	0.01284496	12.560	0.0001
Capacity 36-51	0.208477	0.01445140	14.426	0.0001
Capacity 52-61	0.238975	0.01715735	13.928	0.0001
Capacity 62-79	0.177531	0.02809362	6.319	0.0001
Capacity 80 +	0.147241	0.04914878	2.996	0.0027
TCI	0.185607	0.01521661	12.198	0.0001
Time Warner	0.072874	0.02198391	3.315	0.0009
Large MSO	-0.025773	0.00955970	-2.696	0.0070
South	0.014201	0.01791286	0.793	0.4279
Pacific	-0.008570	0.02283120	-0.375	0.7074
Midwest	0.028886	0.01735940	1.664	0.0962
South West	-0.041852	0.01996484	-2.096	0.0361
Mountain	-0.020849	0.02224410	-0.937	0.3486
Other Region	0.065217	0.09657822	0.675	0.4995

Table A-10
Dependent Variable: MTV (independent)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	834.33564	46.35198	313.633	0.0001
Error	8242	1218.08900	0.14779		
C Total	8260	2052.42465			

Root MSE	0.38444	R-square	0.4065
Dep Mean	0.46060	Adj R-sq	0.4052
C.V.	83.46438		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	-0.687053	0.03310441	-20.754	0.0001
log(Stations)	0.030737	0.01083447	2.837	0.0046
Interconnect	-0.016872	0.01625566	-1.038	0.2994
Local Adv	-0.008360	0.01267021	-0.660	0.5094
log(Homes)	0.139337	0.00374088	37.247	0.0001
Capacity 24-35	0.152623	0.01262667	12.087	0.0001
Capacity 36-51	0.211417	0.01420581	14.882	0.0001
Capacity 52-61	0.213678	0.01686577	12.669	0.0001
Capacity 62-79	0.154583	0.02761618	5.598	0.0001
Capacity 80 +	0.068176	0.04831353	1.411	0.1582
TCI	0.132391	0.01495801	8.851	0.0001
Time Warner	0.110582	0.02161030	5.117	0.0001
Large MSO	-0.031146	0.00939724	-3.314	0.0009
South	-0.039065	0.01760844	-2.219	0.0265
Pacific	-0.083293	0.02244319	-3.711	0.0002
Midwest	-0.035157	0.01706439	-2.060	0.0394
South West	-0.130514	0.01962555	-6.650	0.0001
Mountain	-0.105506	0.02186607	-4.825	0.0001
Other Region	-0.014612	0.09493692	-0.154	0.8777

Table A-11
Dependent Variable: Weather (independent)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	788.83661	43.82426	299.927	0.0001
Error	8242	1204.29328	0.14612		
C Total	8260	1993.12989			

Root MSE	0.38225	R-square	0.3958
Dep Mean	0.40528	Adj R-sq	0.3945
C.V.	94.31852		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	-0.620173	0.03291641	-18.841	0.0001
log(Stations)	-0.009659	0.01077294	-0.897	0.3699
Interconnect	-0.026008	0.01616335	-1.609	0.1076
Local Adv	0.058733	0.01259826	4.662	0.0001
log(Homes)	0.123733	0.00371963	33.265	0.0001
Capacity 24-35	0.127696	0.01255496	10.171	0.0001
Capacity 36-51	0.193435	0.01412513	13.694	0.0001
Capacity 52-61	0.235406	0.01676999	14.037	0.0001
Capacity 62-79	0.199580	0.02745935	7.268	0.0001
Capacity 80 +	0.203247	0.04803916	4.231	0.0001
TCI	0.144760	0.01487306	9.733	0.0001
Time Warner	0.103995	0.02148758	4.840	0.0001
Large MSO	-0.027989	0.00934387	-2.995	0.0027
South	0.072526	0.01750844	4.142	0.0001
Pacific	-0.233575	0.02231574	-10.467	0.0001
Midwest	-0.022155	0.01696748	-1.306	0.1917
South West	0.043913	0.01951410	2.250	0.0245
Mountain	-0.011474	0.02174190	-0.528	0.5977
Other Region	-0.527826	0.09439778	-5.592	0.0001

Table A-12
Dependent Variable: Nashville (independent)

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	18	95.14517	5.28584	33.062	0.0001
Error	8242	1317.71865	0.15988		
C Total	8260	1412.86382			

Root MSE	0.39985	R-square	0.0673
Dep Mean	0.78102	Adj R-sq	0.0653
C.V.	51.19568		

Parameter Estimates

Variable	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
Intercept	0.534791	0.03443164	15.532	0.0001
log(Stations)	0.001315	0.01126885	0.117	0.9071
Interconnect	-0.001765	0.01690739	-0.104	0.9169
Local Adv	0.058358	0.01317819	4.428	0.0001
log(Homes)	0.018991	0.00389086	4.881	0.0001
Capacity 24-35	0.157936	0.01313290	12.026	0.0001
Capacity 36-51	0.098215	0.01477535	6.647	0.0001
Capacity 52-61	0.109546	0.01754196	6.245	0.0001
Capacity 62-79	0.074915	0.02872337	2.608	0.0091
Capacity 80 +	0.103500	0.05025052	2.060	0.0395
TCI	0.106253	0.01555771	6.830	0.0001
Time Warner	0.053689	0.02247671	2.389	0.0169
Large MSO	-0.050789	0.00977399	-5.196	0.0001
South	0.012850	0.01831440	0.702	0.4829
Pacific	-0.100290	0.02334299	-4.296	0.0001
Midwest	0.005502	0.01774854	0.310	0.7566
South West	-0.056968	0.02041238	-2.791	0.0053
Mountain	0.036415	0.02274273	1.601	0.1094
Other Region	-0.149456	0.09874315	-1.514	0.1302